

Applicant : Joseph A. Luongo
Serial No. : 10/598,310
Filed : June 25, 2008
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Attorney's Docket No.: W-392-02

Amendments to the Drawings:

The attached replacement sheet of drawings includes changes to FIG. 1 and replaces the original sheet including FIG. 1.

In FIG. 1, dashed lines representing the fluid discharge opening and corresponding reference designator "30" were added to the figure. Reference designator "32," which corresponds to the second end wall, was also added to the figure.

Attachments following last page of this Amendment:

Replacement Sheet (1 pages)

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REMARKS

Applicant has amended claims 1, 2, 4, and 10. Claims 6-9 are canceled. Claims 1-5 and 10 are presented for examination.

Drawings

The drawings were objected to for failing to show the “fluid discharge opening” and the “second end wall.” Applicant respectfully requests reconsideration and withdrawal of this objection in view of the amendments to FIG. 1.

Claim Objections

Claims 1-10 were objected to because of the following informalities noted by the Office: “Regarding claims 1 and 10, “a plunger” in lines 7 and 17 should be --said plunger--.” Applicant respectfully requests reconsideration and withdrawal of this objection in view of the amendments to claims 1 and 10.

Claim Rejections – 35 U.S.C. § 112

Claim 4 was rejected as being indefinite for lacking antecedent basis for “said metal and metal alloy” in line 1. Applicant requests reconsideration and withdrawal of this rejection in view of the foregoing amendments to claim 4.

35 U.S.C. §§102 and 103

Claims 1-2, 5-6, and 10 were rejected as being anticipated by U.S. Patent No. 3,847,507 (Sakiyama). Claims 7-9 were rejected as being unpatentable over Sakiyama. Claims 3 and 4 were rejected as being unpatentable over Sakiyama in view of WIPO Publication No. WO 2005/042064 (Cook) as evidenced by U.S. Patent No. 6,609,883 (Woodard).

Claim 1, as amended, recites, in pertinent part, “wherein the housing has an integrally formed cavity recessed into its exterior surface to provide a transducer surface which is radially spaced from the interior surface of the housing and which is disposed between said first and

second end walls, and wherein a strain sensor is affixed to the transducer surface to measure radial deformation of the housing.” The prior art of record does not disclose or suggest the foregoing in combination with the remaining limitations of the claims.

Sakiyama discloses a pump and cylinder in a system for supplying liquid in a constant pressure for use in a liquid chromatograph. The pump has an elastically deformable diaphragm 5 at one end of the cylinder to which a strain gauge 23 is attached which converts pressure changes of the fluid within the pump cylinder to a signal proportional to those pressure changes, the signal being transmitted to an indicator 27 through a pre-amplifier 26. This arrangement is not measuring deformation of the cylinder itself as in the present invention, but instead measures fluctuations in pressure of the fluid within the cylinder based on deformation of the diaphragm 5.

New claim 1 reflects this fundamental difference by reference to a strain sensor being affixed to a transducer surface to measure deformation of the housing resulting from differences in fluid pressure within the chamber.

Furthermore, the transducer surface is further defined as being in a cavity provided in the exterior surface of the housing between a first and a second end walls of the cylindrical chamber which is not the arrangement disclosed in Sakiyama. The cylinder 2 of Sakiyama, which the Office Action apparently equates to the housing of applicant's claims, does not have an integrally formed cavity recessed into its exterior surface to provide a transducer surface, but rather an elastically deformable non-integral diaphragm 5 which is secured to one end of the cylinder 2 through a gasket 6. Nor does Sakiyama indicate that such an arrangement would be in any way beneficial. Nor would a person of ordinary skill in the art have modified Sakiyama's system in a way to provide such an arrangement.

The remaining art has not been cited for teaching these missing features, nor would it have been obvious to combine the various teachings of the applied art in such a manner as to arrive at the applicant's invention.

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Please charge any additional fees, not already covered by check, or credit any overpayment, to deposit account 230503, referencing Attorney Docket No. W-392-US.

Respectfully submitted,

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